

ADD-ON ^{ATARI®} DRIVES

PERCOM DATA
CORPORATION

RFD, AT88, AND AT88SPD
ADD-ON DRIVES
FOR THE
ATARI COMPUTER

Manual Number
050-1351-001

PERCOM DATA CORPORATION
11220 Pagemill Road
Dallas, Texas 75243

RADIO FREQUENCY INTERFERENCE PROTECTION

This equipment generates and uses radio frequency energy. If not installed and used properly, that is, in strict accordance with Percom Data installation and operation instructions, it may cause interference to radio and television reception. There is no guarantee, however, that interference will not occur in a particular installation.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, we encourage you to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet in order for the computer and the receiver to be on different branch outlets.

If necessary, consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the United States Government Printing Office, Washington, DC 20402, Stock Number 004-000-0035-4.

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Chapter One — Introduction

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Chapter One is an introduction.

THE UNIVERSITY OF CHICAGO
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CHICAGO, ILL. 60637
U.S.A.

What Did I Buy?

You bought a Percom Data RFD, AT88, or AT88SPD Add-On Floppy Disk Drive.

What Should I Already Own?

You should already own a Percom Data RFD, AT88, or AT88SPD System Floppy Disk Drive and the OS/A+ 2.0, OS/A+ 4.0, OS/A+ 4.10, or Atari DOS 2.0S Operating System for the Atari 800 or 400 Computer.

Do I Have Combination Limitations?

Any system drive (RFD, AT88, or AT88SPD) can be connected to any add-on drive (RFD, AT88, or AT88SPD) except for the following case: An add-on half-height AT88 or AT88SPD cannot be connected to a system RFD drive.

What About the Density?

If you have an AT88 system drive that does not contain a Doubler, the system drive and its add-on drives only work in single density. If you have an AT88 system drive that contains a Doubler, the system drive and its add-on drives work in either single density or double density.

If you have an AT88SPD or RFD system drive, it and its add-on drives work in single density or double density.

The use of double density is also limited by the software. Atari DOS 2.0S only works in single density even if the drives can be used in single density or double density. OS/A+ has the CONFIG command that allows you to configure and use your drives in single density or double density.

Can I Use My Atari 810 Drive?

Yes, the Atari 810 can be directly connected to a Percom System Drive and can be addressed as an add-on drive.

What Do I Need to Do?

Cable your system as described in Chapter 2.

Any Accessories?

You can purchase one, two, or three Percom Data Add-On Drives for your system.

A printer cable is available for the AT88SPD system drive to allow you to hook your drive directly to your printer.

A Doubler can be purchased to allow your AT88 system drive to work in either single density or double density.

Percom Data manufactures a Data/Clock separator circuit; the SEPARATOR plugs into an Atari 810 Disk Drive and virtually eliminates problems associated with reading diskettes on the Atari 810 Drive.

For more information about Percom Data products for your Atari computer, visit or telephone 1-800-527-1222 (outside of Texas) or (214) 340-5800 (within Texas) for an authorized Percom Data retailer.

What Do I Need?

To use Percom Data Add-On Drives with your Atari computer, you need the following:

- An Atari 800 or an Atari 400 computer with 32 kilobytes of RAM and a compatible display system.
- A Percom Data System Drive.
- A two or four connector ribbon cable.
- Operating system OS/A+ 2.0, OS/A+ 4.00, OS/A+ 4.10, or Atari DOS 2.0S and the appropriate manual.

A Final Word

Please be sure your computer is operating properly before attempting to expand it with a disk drive system or other peripheral devices. Adding new devices to a system with a problem may further complicate the problem and make troubleshooting more difficult.

Every effort has been made to ensure that this manual accurately documents your Percom Data Drive. If you have any comments, you are welcome to call or write us at Percom Data. We are continuously improving and updating both the software and the hardware and therefore Percom Data Corporation cannot absolutely guarantee the accuracy of this publication.

Chapter Two — Build Your System

2-1 Caution

2-2 If You Have One Add-On Drive

2-9 If You Have Two Add-On Drives

2-17 If You Have Three Add-On Drives

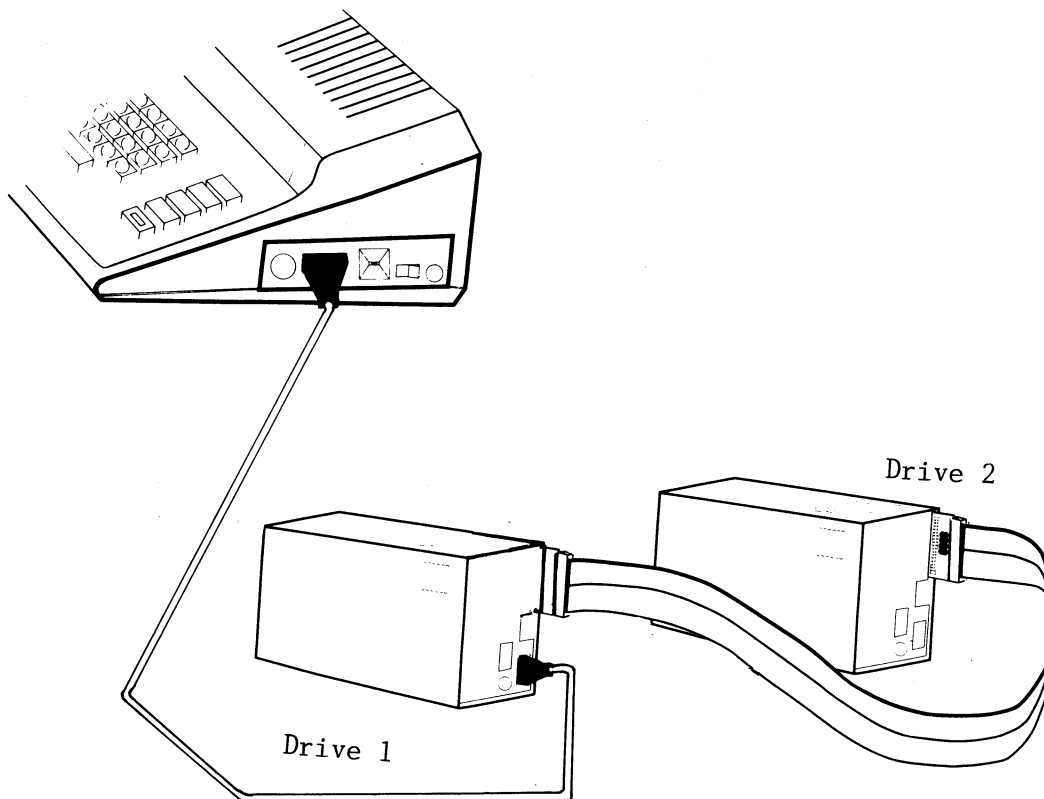
**Chapter Two describes how to cable
your system.**

Caution

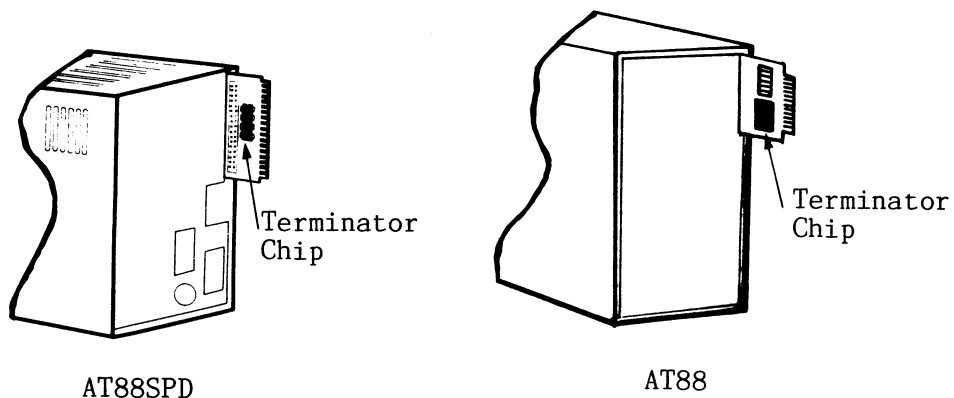
You may have to get inside a floppy disk drive, and therefore, come in contact with integrated circuits chips. Some chips are very sensitive to charge buildup on their leads, a condition that can destroy the integrated circuit. The following can help prevent a charge buildup on the integrated circuit leads:

- Wear clothes that do not create a static electrical charge. Silk and synthetic clothes easily create a static charge. Natural fibers, for example, cotton jeans, are more resistant to a charge buildup.
- Perform the drive assembly in an area that is not carpeted. A tile floor is a good place.
- To avoid building a static charge by walking across a carpet etc., get a Phillips-headed and a flat-headed screwdriver at your work site before you start to assemble your system.

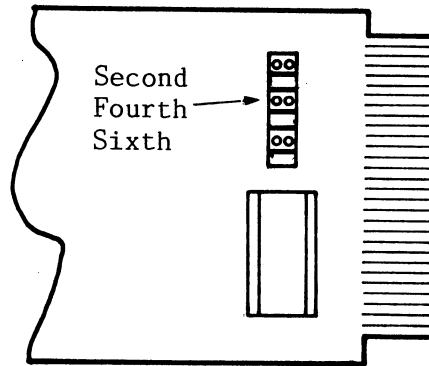
If You Have One Add-On Drive



1. Caution - Be sure all your devices are disconnected from any wall outlets.
 2. Look at the rear of the system drive (Drive 1). Perform 2A if you have an AT88 or AT88SPD for Drive 1, or 2B if you have an RFD for Drive 1.
- 2A. If you have an AT88 or AT88SPD for Drive 1, remove the black terminator chip on the system drive with a flat-headed screwdriver or a nail file.

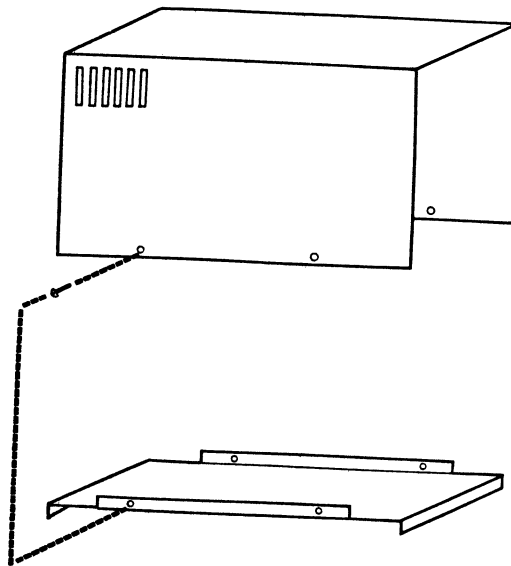


If you have an AT88, be sure that only three blue jumper straps, the second, fourth, and sixth from the top, are connected. Remove all the other jumper straps.



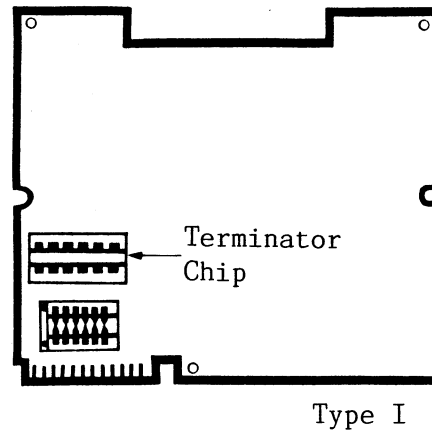
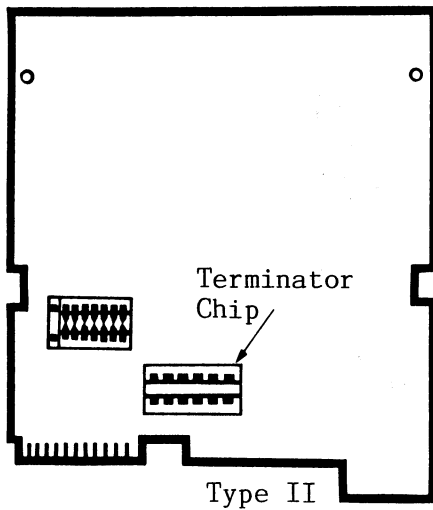
AT88

- 2B. If you have an RFD for Drive 1, take off the cover of the drive by removing four Phillips-head screws and lifting the cover off of the base.



After the cover is removed, lay the drive on the work surface with the circuit board up. The opening for the diskette is to be facing away from you.

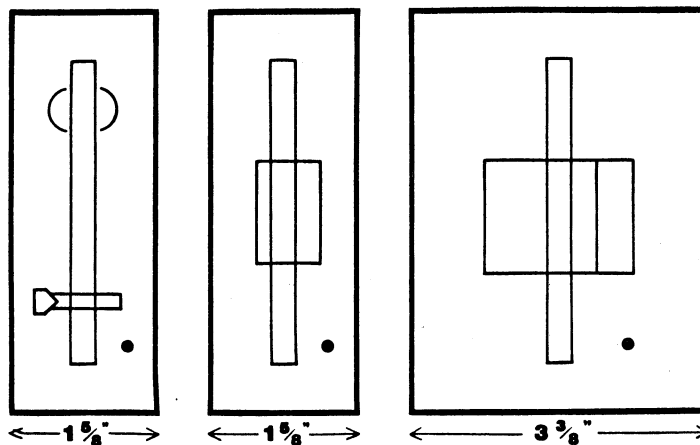
Decide if you have a type I or type II board.



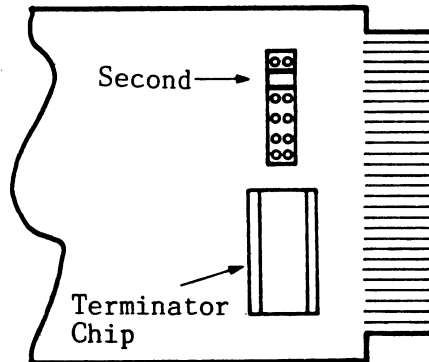
Gently pry up the terminator chip with a flat-headed screwdriver or a nail file. Caution - Do not try to remove the black socket soldered to the circuit board.

3. Look at the front of the first add-on drive (Drive 2). Decide if you have a half-height drive (1 5/8 inches wide) or a full-height drive (3 3/8 inches wide).

If you have a half-height drive for Drive 2, perform 3A. If you have a full-height drive for Drive 2, perform 3B.

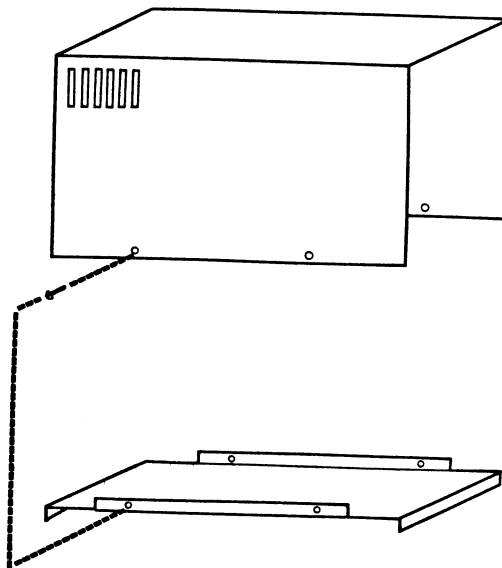


- 3A. If you have a half-height drive for Drive 2, look at the rear of the drive. Be sure that only one blue jumper strap, the second one from the top, is connected. Remove all the other jumper straps.



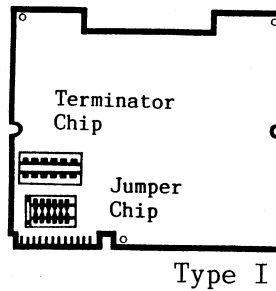
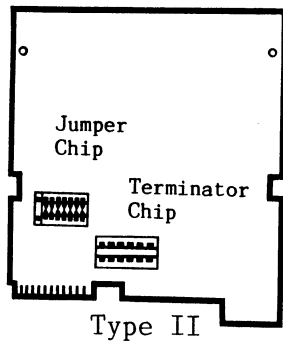
Do not remove the terminator chip on Drive 2.

- 3B. If you have a full-height drive for Drive 2, take off the cover of the drive by removing four Phillips-head screws and lifting the cover off of the base.



After the cover is removed, lay the drive on the work surface with the circuit board up. The opening for the diskette is to be facing away from you.

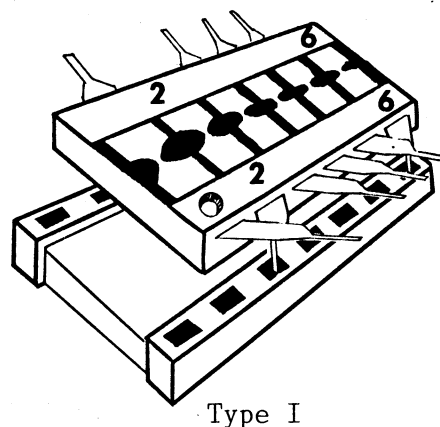
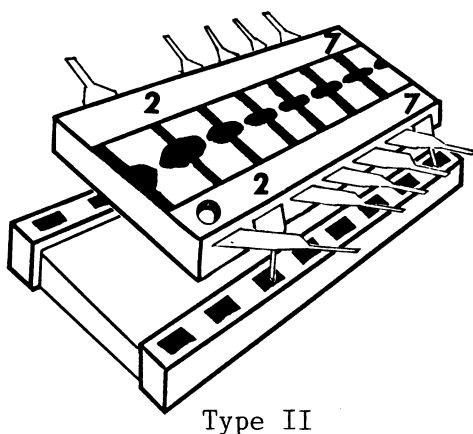
Decide if you have a type I or type II circuit board.



Gently pry up, on Drive 2 (type I or type II), one end of the jumper chip with a flat-headed screwdriver or a nail file, and then gently pry up the other end. Caution - Do not try to remove the black socket soldered to the circuit board.

Except for the second and seventh set of pins (type II), or the second and sixth set of pins (type I), bend all of the pins outward.

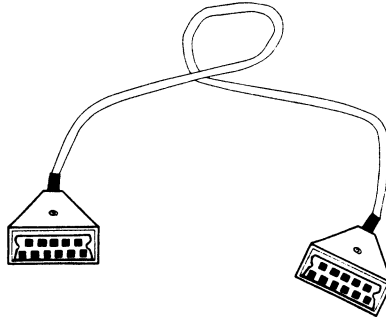
Gently reinsert the four jumper pins into the black socket of Drive 2. Note - The jumper chip is not as large as the socket; therefore, two pin holes should be visible to your left once the jumper chip is firmly inserted into the socket.



Do not remove the terminator chip on Drive 2 (type I or type II).

4. Look at the system drive data cable; it has a D-connector at both ends.

Connect the system drive data cable between your computer and your system drive (Drive 1). (There are two D-connectors at the base of the system drive: Either connector can be used.)

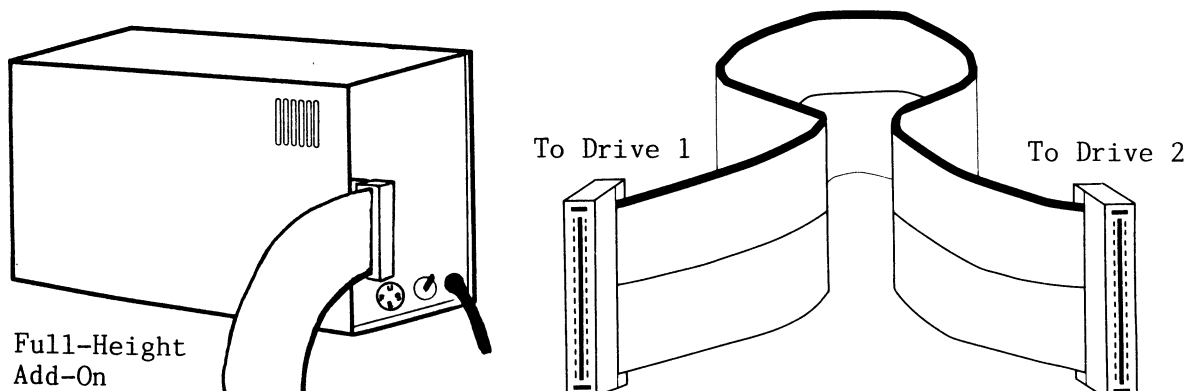


5. Look at the add-on drive ribbon cable. Notice the colored striped edge (probably red) on the ribbon cable and the two card edge connectors.

If you have a half-height add-on drive, connect the add-on drive ribbon cable between the system drive (Drive 1) and the first add-on drive (Drive 2) as depicted in the figure on page 2-1. Be sure the colored striped edge is up.

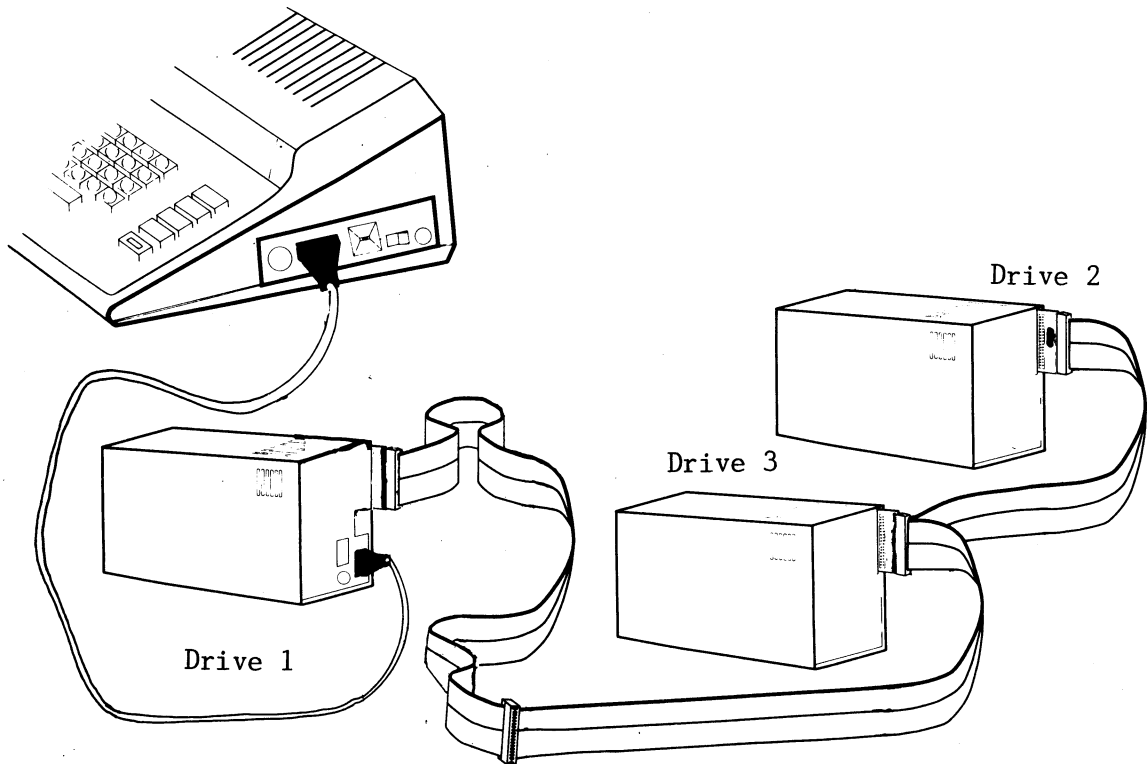
If you have a full-height add-on drive, the previous figure does not show the correct position of the card edge on Drive 2. Instead, look at the lower, left rear of Drive 2. Connect the card edge to the add-on drive ribbon cable. Note that the ribbon must be twisted about 180 degrees and the colored striped edge must be down when the ribbon is connected to the card edge connector on Drive 2.

Except for the position of the card edge on the add-on drives, half-height and full-height drives are cabled identically.

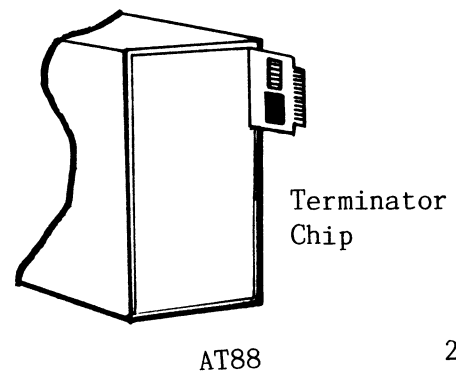
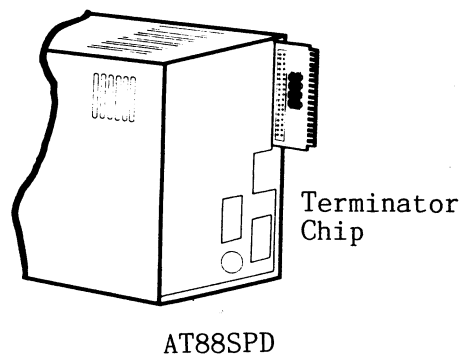


6. Plug your Atari Power Adapter into an ac wall outlet and plug its small dc plug into your computer.
7. Plug your drives' ac power cords into an ac wall outlet.

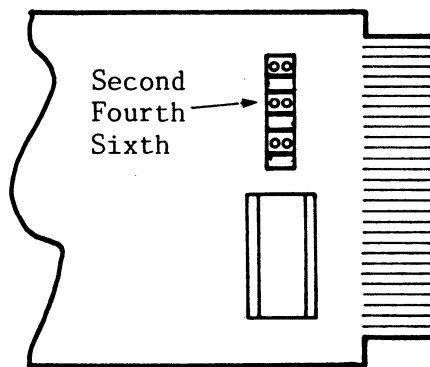
If You Have Two Add-On Drives



1. Caution - Be sure all your devices are disconnected from any wall outlets.
2. Look at the rear of the system drive (Drive 1). Perform 2A if you have an ATT88 or AT88SPD for Drive 1, or 2B if you have an RFD for Drive 1.
- 2A. If you have an AT88 or AT88SPD for Drive 1, remove the black terminator chip on the system drive with a flat-headed screwdriver or a nail file.

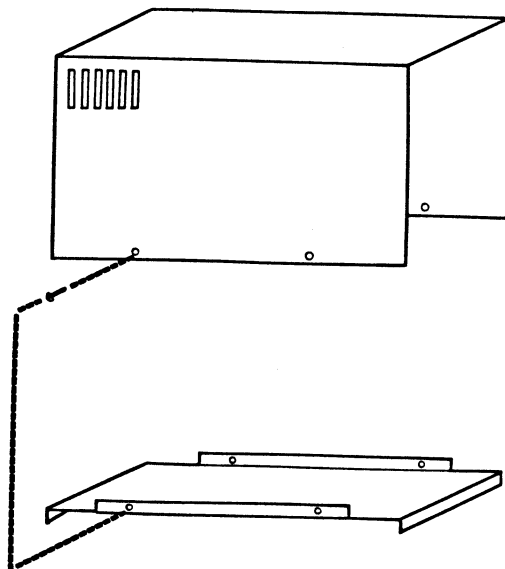


If you have an AT88, be sure that only three blue jumper straps, the second, the fourth, and the sixth from the top, are connected. Remove all the other jumper straps.



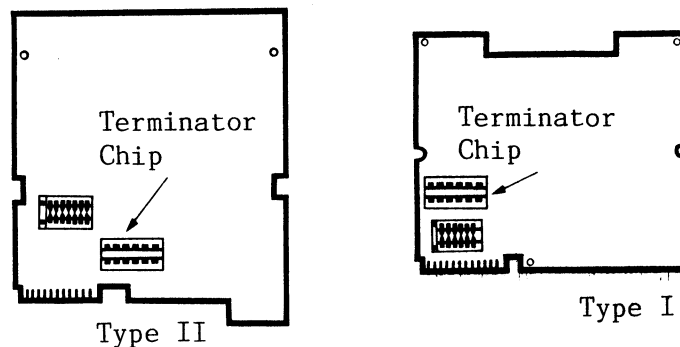
AT88

- 2B. If you have an RFD for Drive 1, take off the cover of the drive by removing four Phillips-head screws and lifting the cover off of the base.



After the cover is removed, lay the drive on the work surface with the circuit board up. The opening for the diskette is to be facing away from you.

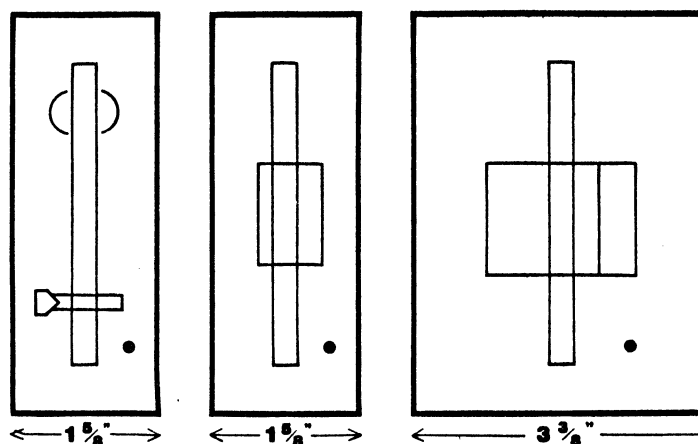
Decide if you have a type I or type II board.



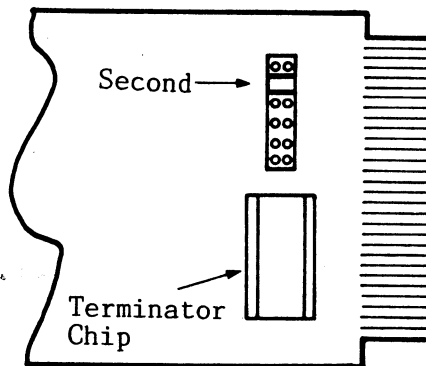
Gently pry up the terminator chip with a flat-headed screwdriver or a nail file. Caution - Do not try to remove the black socket soldered to the circuit board.

3. Look at the front of the first add-on drive (Drive 2). Decide if you have a half-height drive (1 5/8 inches wide) or a full-height drive (3 3/8 inches wide).

If you have a half-height drive for Drive 2, perform 3A. If you have a full-height drive for Drive 2, perform 3B.

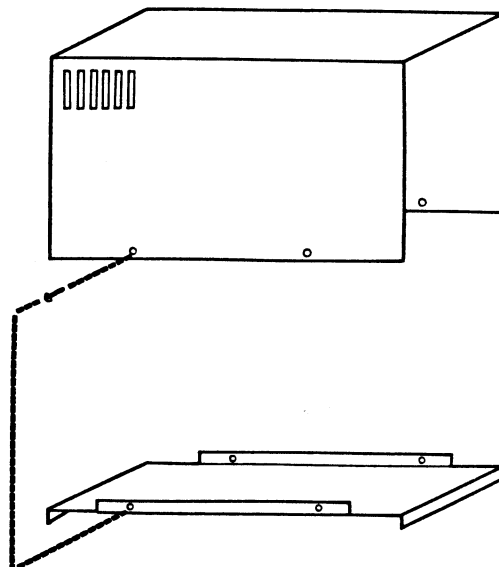


- 3A. If you have half-height drive for Drive 2, look at the rear of the drive. Be sure that only one blue jumper strap, the second one from the top, is connected. Remove all the other jumper straps.



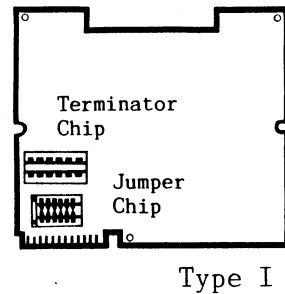
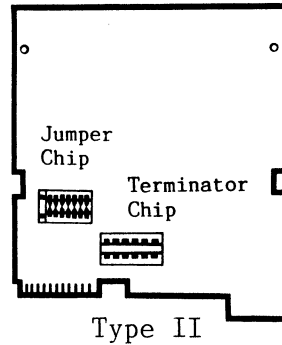
Do not remove the terminator chip on Drive 2.

- 3B. If you have a full-height drive for Drive 2, take off the cover of the drive by removing four Phillips-head screws and lifting the cover off of the base.



After the cover is removed, lay the drive on the work surface with the circuit board up. The opening for the diskette is to be facing away from you.

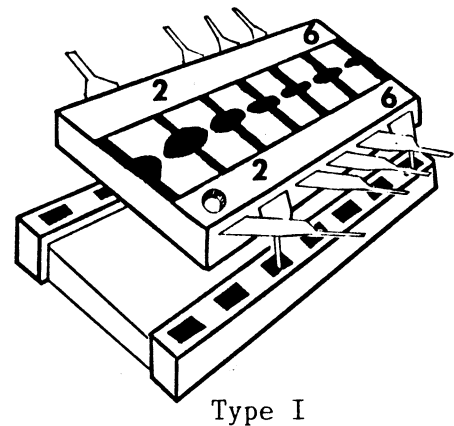
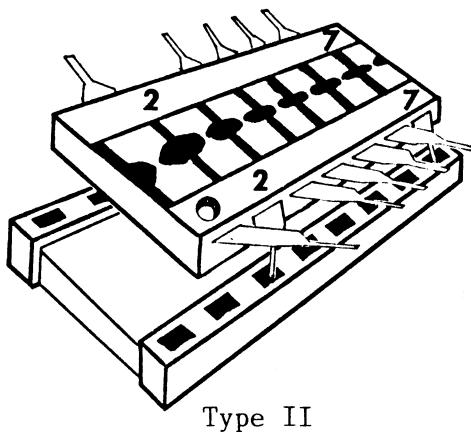
Decide if you have a type I or type II circuit board.



Gently pry up, on Drive 2 (type I or type II), one end of the jumper chip with a flat-headed screwdriver or a nail file, and then gently pry up the other end. Caution - Do not try to remove the black socket soldered to the circuit board.

Except for the second and seventh set of pins (type II), or the second and sixth set of pins (type I), bend all of the pins outward.

Gently reinsert the four jumper pins into the black socket of Drive 2. Note - The jumper chip is not as large as the socket; therefore, two pin holes should be visible to your left once the jumper chip is firmly inserted into the socket.

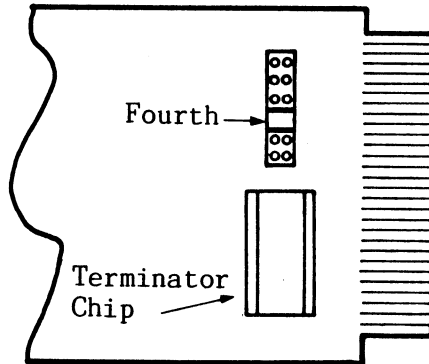


Do not remove the terminator chip from Drive 2 (type I or type II).

4. Look at the front of the second add-on drive (Drive 3). Decide if you have a half-height drive (1 5/8 inches wide) or a full-height drive (3 3/8 inches wide). (Refer to the previous figure of drive fronts.)

If you have a half-height drive for Drive 3, perform 4A. If you have a full-height drive for Drive 3, perform 4B.

- 4A. If you have a half-height drive for Drive 3, look at the rear of the drive. Be sure that only one blue jumper strap, the fourth one from the top, is connected. Remove all the other jumper straps.

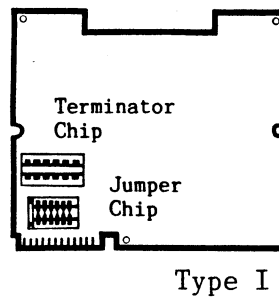
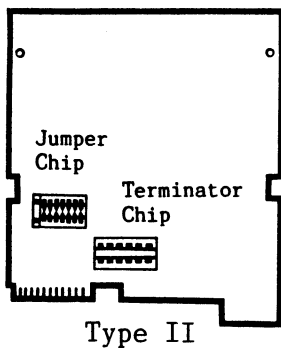


Remove the terminator chip from the rear of the half-height drive.

- 4B. If you have a full-height drive for Drive 3, take off the cover of the drive by removing four Phillips-head screws and lifting the cover off of the base. (Refer to the previous figure showing the removal of the drive cover.)

After the cover is removed, lay the drive on the work surface with the circuit board up. The opening for the diskette is to be facing away from you.

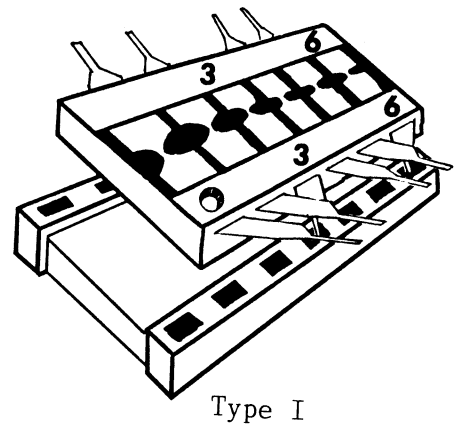
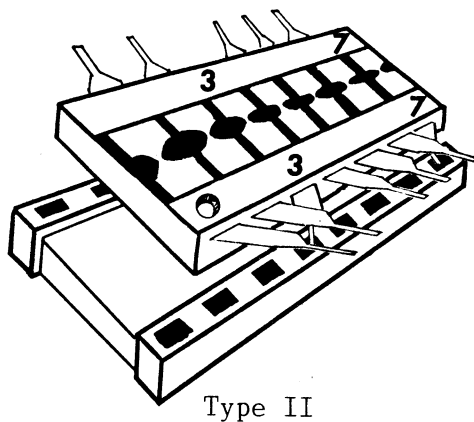
Decide if you have a type I or type II circuit board.



Gently pry up, on Drive 3 (type I or type II), one end of the jumper chip with a flat-headed screwdriver or a nail file, and then gently pry up the other end. Caution - Do not try to remove the black socket soldered to the circuit board.

Except for the third and seventh set of pins (type II), or the third and sixth set of pins (type I), bend all of the pins outward.

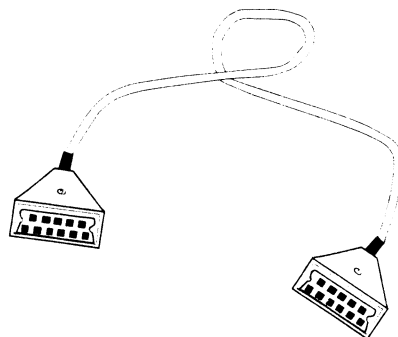
Gently reinsert the four jumper pins into the black socket of Drive 3. Note - The jumper chip is not as large as the socket; therefore, two pin holes should be visible to your left once the jumper chip is firmly inserted into the socket.



Remove the terminator chip from Drive 3 (type I or II).

5. Look at the system drive data cable; it has a D-connector at both ends.

Connect the system drive data cable between your computer and your system drive (Drive 1). (There are two D-connectors at the base of the system drive: Either connector can be used.)

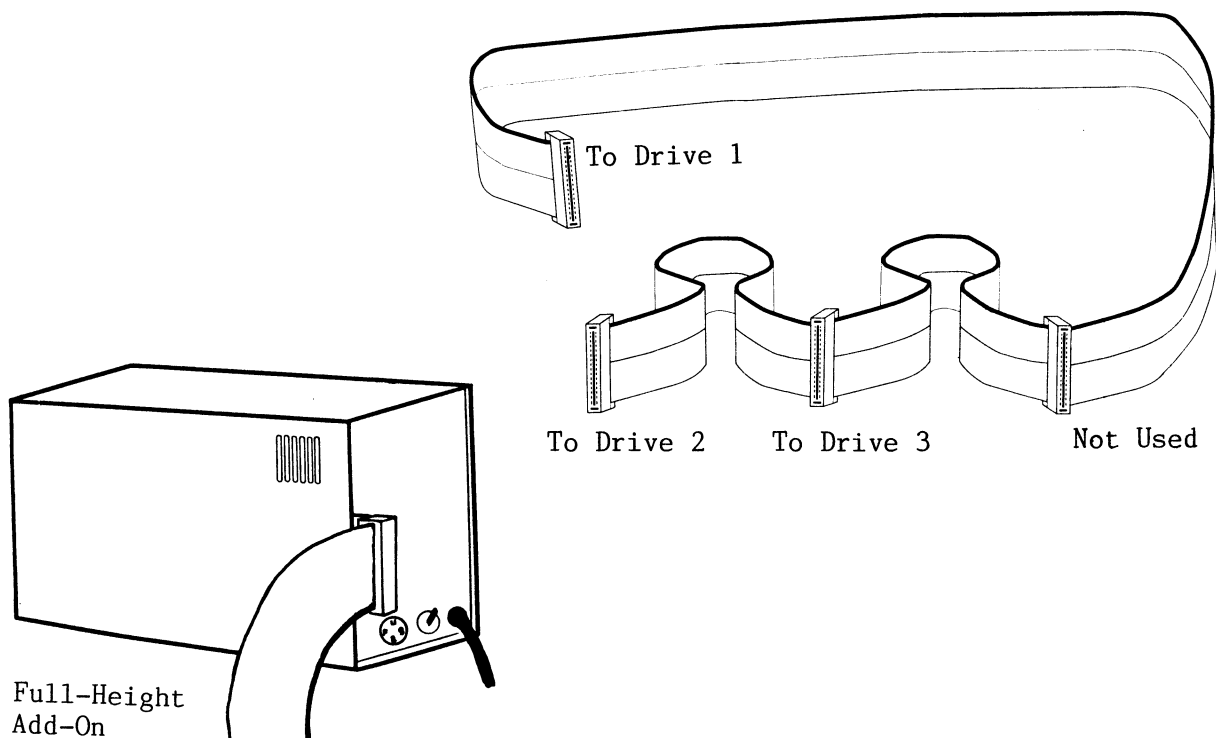


6. Look at the add-on drive ribbon cable. Notice the colored striped edge (probably red) on the ribbon cable and the four edge connectors.

If you have half-height add-on drives, connect the add-on drive ribbon cable to the system drive (Drive 1), the first add-on drive (Drive 2), and the second add-on drive (Drive 3) as depicted in the figure on page 2-9. (Note that one connector is not used.) Be sure the colored striped edge is up.

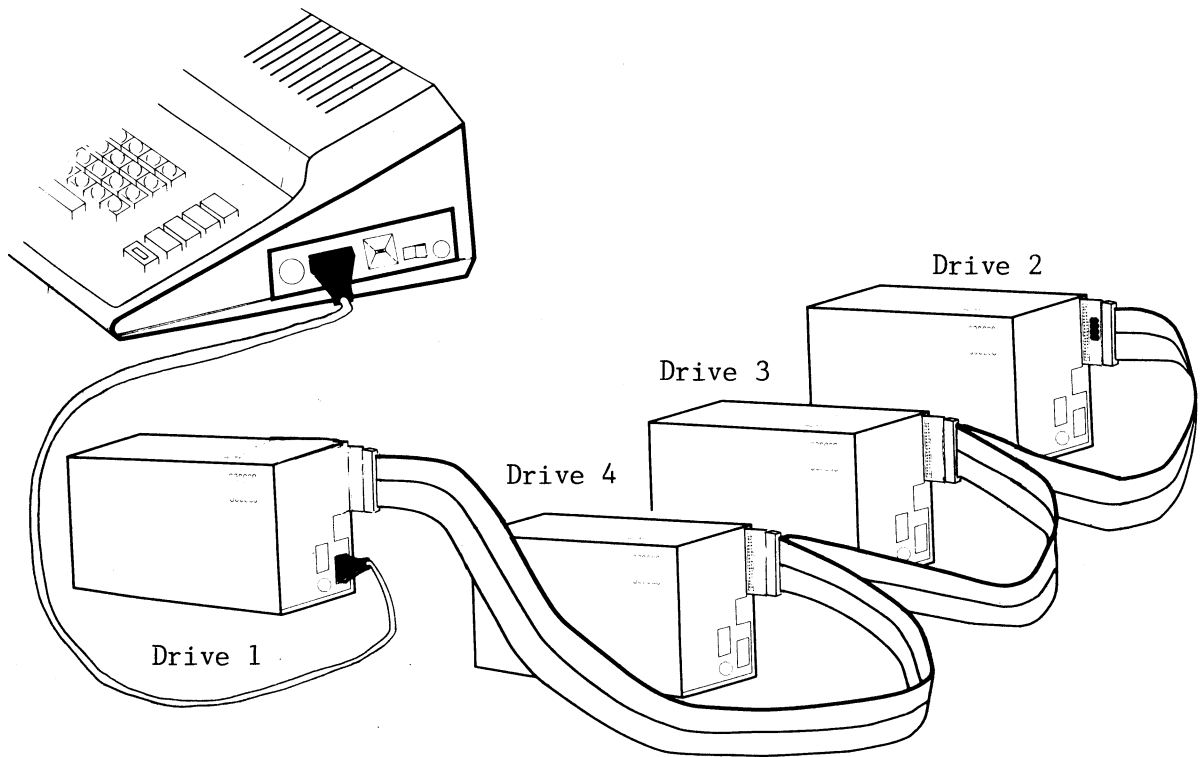
If you have full-height add-on drives, the previous figure does not show the correct position of the card edge on Drive 2 and Drive 3. Instead, look at the lower, left rear of Drive 2 and Drive 3. Connect the card edges to the ribbon cable. Note that the ribbon must be twisted about 180 degrees and the colored striped edge must be down when the ribbon is connected to the card edge connectors on Drive 2 and Drive 3.

Except for the position of the card edge on the add-on drives, half-height and full-height drives are cabled identically.

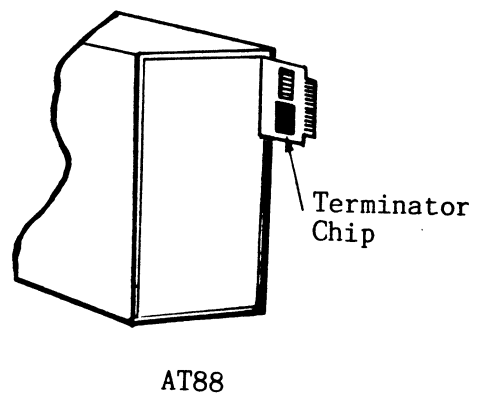
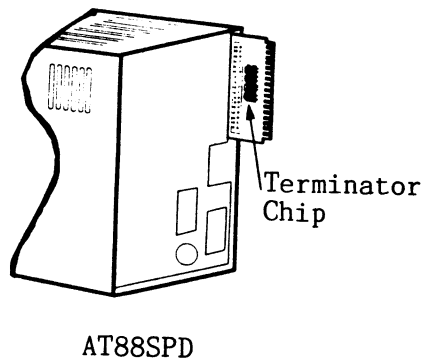


7. Plug your Atari Power Adapter into an ac wall outlet and plug its small dc plug into your computer.
8. Plug your drives' ac power cords into an ac wall outlet.

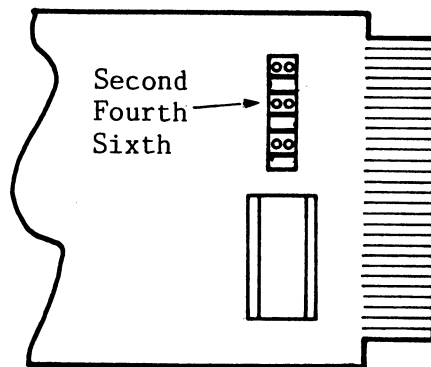
If You Have Three Add-On Drives



1. Caution - Be sure all of your devices are disconnected from any wall outlets.
2. Look at the rear of the system drive (Drive 1). Perform 2A if you have an ATT88 or AT88SPD for Drive 1, or 2B if you have an RFD for Drive 1.
- 2A. If you have an AT88 or AT88SPD for Drive 1, remove the black terminator chip on the system drive with a flat-headed screwdriver or a nail file.

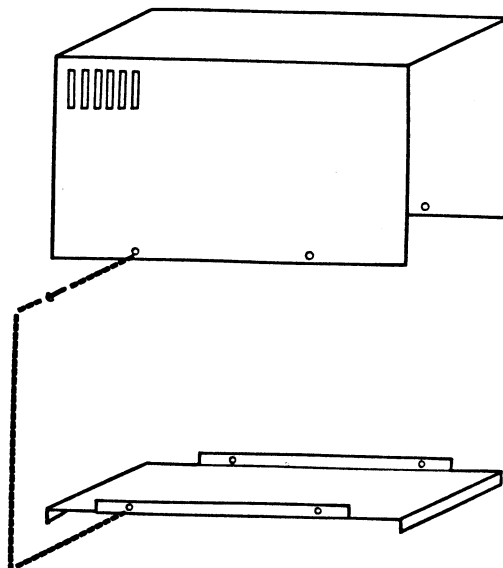


If you have an AT88, be sure that only three blue jumper straps, the second, the fourth, and the sixth from the top, are connected. Remove all the other jumper straps.



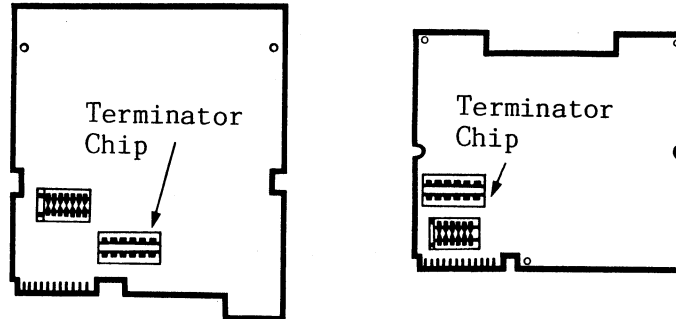
AT88

- 2B. If you have an RFD for Drive 1, take off the cover of the drive by removing four Phillips-head screws and lifting the cover off of the base.



After the cover is removed, lay the drive on the work surface with the circuit board up. The opening for the diskette is to be facing away from you.

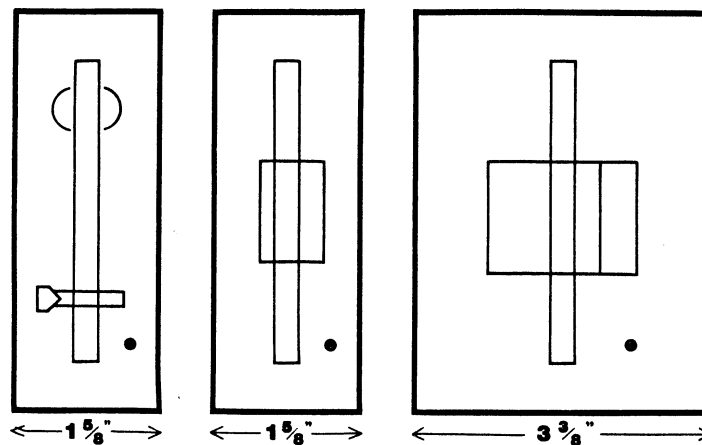
Decide if you have a type I or type II board.



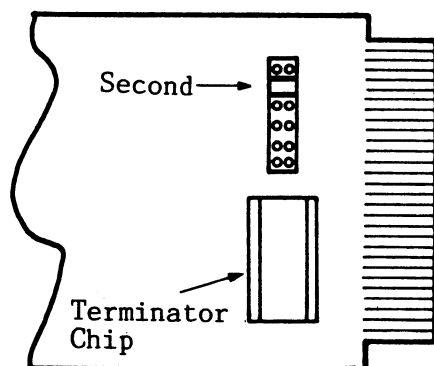
Gently pry up the terminator chip with a flat-headed screwdriver or a nail file. Caution - Do not try to remove the black socket soldered to the circuit board.

3. Look at the front of the second add-on drive (Drive 2). Decide if you have a half-height drive (1 5/8 inches wide) or a full-height drive (3 3/8 inches wide).

If you have a half-height drive for Drive 2, perform 3A. If you have a full-height drive for Drive 2, perform 3B.

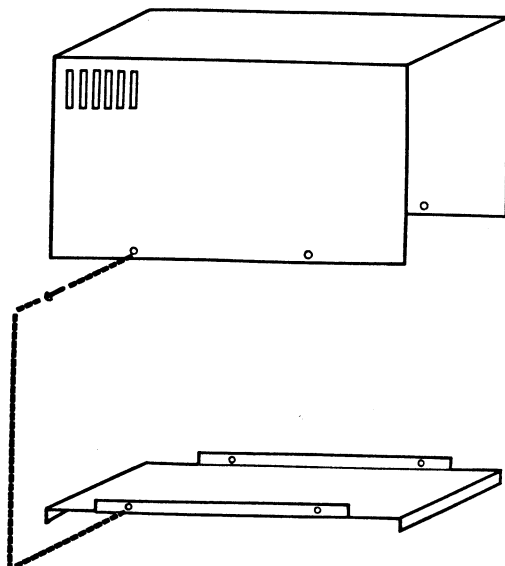


- 3A. If you have half-height drive for Drive 2, look at the rear of the drive. Be sure that only one blue jumper strap, the second one from the top, is connected. Remove all the other jumper straps.



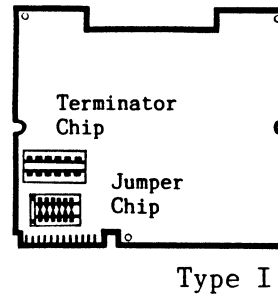
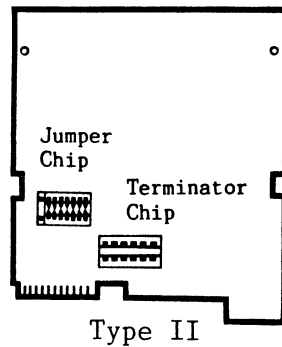
Remove the terminator chip from Drive 2.

- 3B. If you have a full-height drive for Drive 2, take off the cover of the drive by removing four Phillips-head screws and lifting the cover off of the base.



After the cover is removed, lay the drive on the work surface with the circuit board up. The opening for the diskette is to be facing away from you.

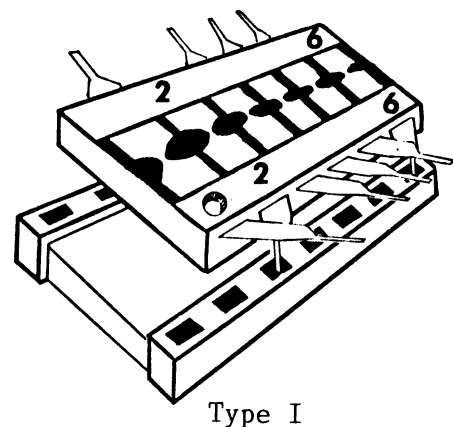
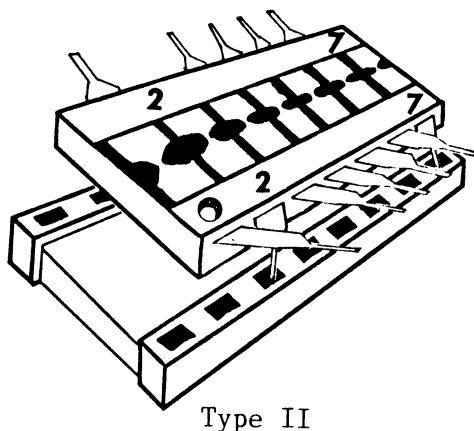
Decide if you have a type I or type II circuit board.



Gently pry up, on Drive 2 (type I or type II), one end of the jumper chip with a flat-headed screwdriver or a nail file, and then gently pry up the other end. Caution - Do not try to remove the black socket soldered to the circuit board.

Except for the second and seventh set of pins (type II), or the second and sixth set of pins (type I), bend all of the pins outward.

Gently reinsert the four jumper pins into the black socket of Drive 2. Note - The jumper chip is not as large as the socket; therefore, two pin holes should be visible to your left once the jumper chip is firmly inserted into the socket.

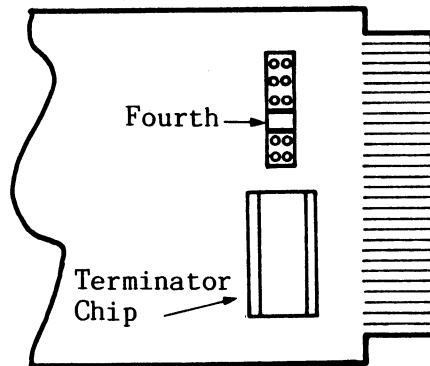


Remove the terminator chip from Drive 2 (type I or type II).

4. Look at the front of the second add-on drive (Drive 3). Decide if you have a half-height drive (1 5/8 inches wide) or a full-height drive (3 3/8 inches wide). (Refer to the previous figure of drive fronts.)

If you have a half-height drive for Drive 3, perform 4A. If you have a full-height drive for Drive 3, perform 4B.

- 4A. If you have a half-height drive for Drive 3, look at the rear of the drive. Be sure that only one blue jumper strap, the fourth one from the top, is connected. Remove all the other jumper straps.

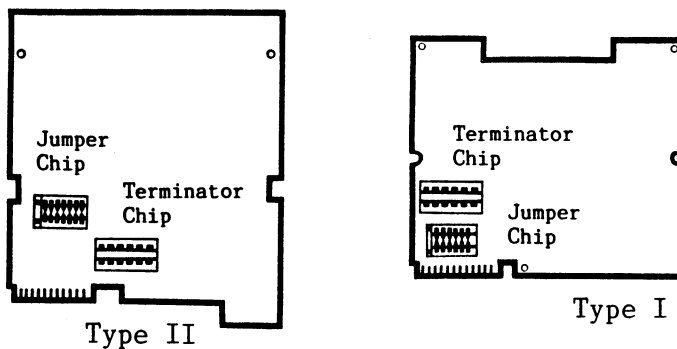


Remove the terminator chip from Drive 3 (type I or type II).

- 4B. If you have a full-height drive for Drive 3, take off the cover of the drive by removing four Phillips-head screws and lifting the cover off of the base. (Refer to the previous figure showing the removal of the drive cover.)

After the cover is removed, lay the drive on the work surface with the circuit board up. The opening for the diskette is to be facing away from you.

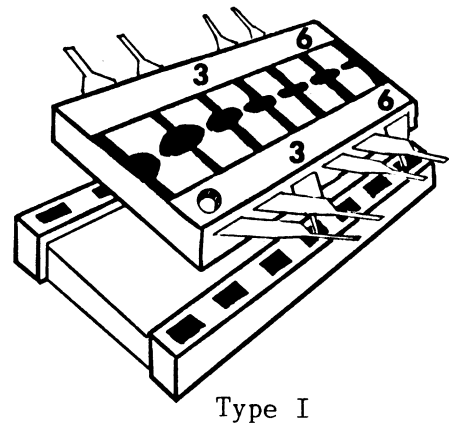
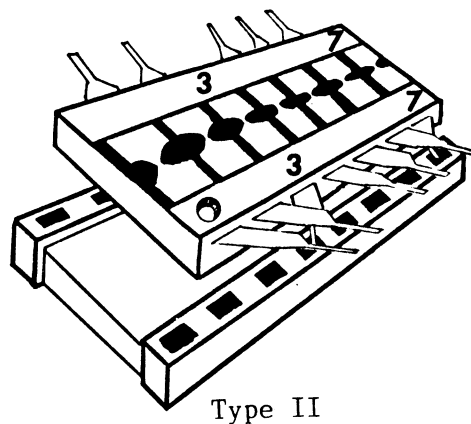
Decide if you have a type I or type II circuit board.



Gently pry up, on Drive 3 (type I or type II), one end of the jumper chip with a flat-headed screwdriver or a nail file, and then gently pry up the other end. Caution - Do not try to remove the black socket soldered to the circuit board.

Except for the third and seventh set of pins (type II), or the third and sixth set of pins (type I), bend all of the pins outward.

Gently reinsert the four jumper pins into the black socket of Drive 3. Note - The jumper chip is not as large as the socket; therefore, two pin holes should be visible to your left once the jumper chip is firmly inserted into the socket.

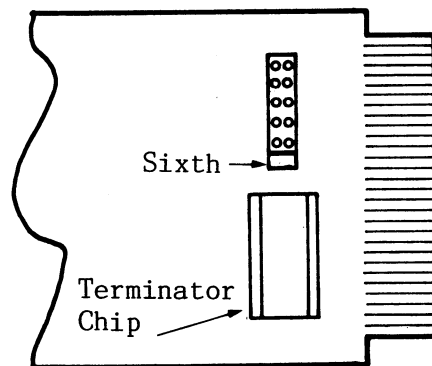


Remove the terminator chip from Drive 3 (type I or II).

5. Look at the front of the third add-on drive (Drive 4). Decide if you have a half-height drive (1 5/8 inches wide) or a full-height drive (3 3/8 inches wide). (Refer to the previous figure of drive fronts.)

If you have a half-height drive for Drive 4, perform 5A. If you have a full-height drive for Drive 4, perform 5B.

- 5A. If you have a half-height drive for Drive 4, look at the rear of the drive. Be sure that only one blue jumper strap, the sixth one from the top, is connected. Remove all the other jumper straps.

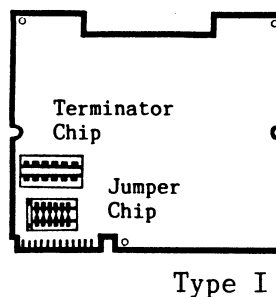
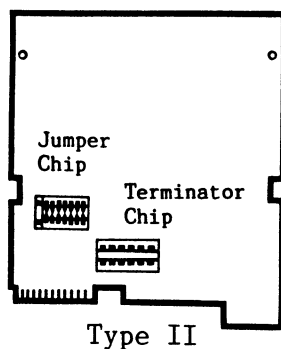


Do not remove the terminator chip on Drive 4.

- 5B. If you have a full-height drive for Drive 4, take off the cover of the drive by removing four Phillips-head screws and lifting the cover off of the base. (Refer to the previous figure showing the removal of the drive cover.)

After the cover is removed, lay the drive on the work surface with the circuit board up. The opening for the diskette is to be facing away from you.

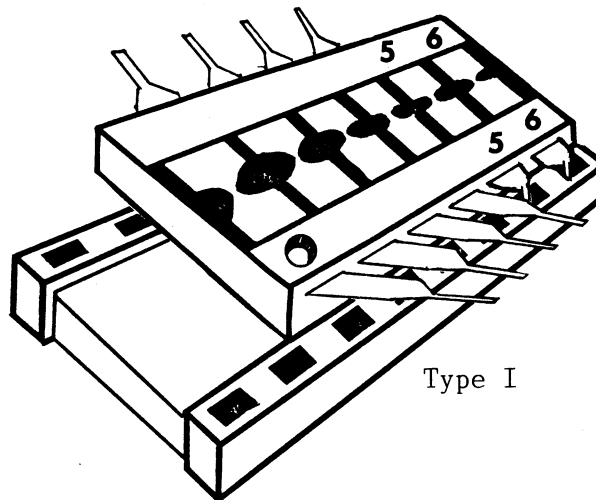
Decide if you have a type I or type II circuit board.



Gently pry up, on Drive 4 (type I or type II), one end of the jumper chip with a flat-headed screwdriver or a nail file, and then gently pry up the other end. Caution - Do not try to remove the black socket soldered to the circuit board.

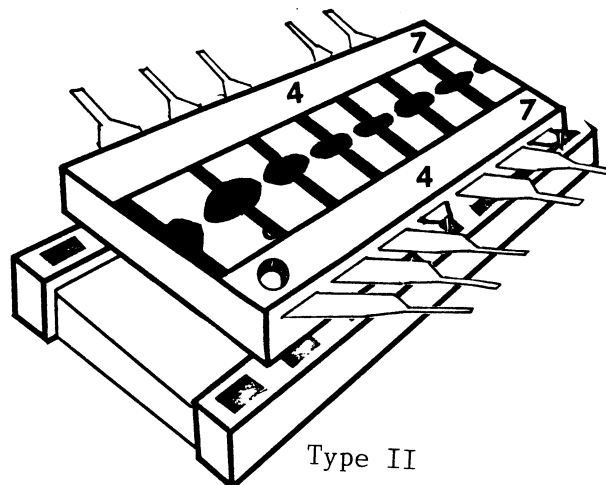
For Drive 4 (type I only), except for the fifth and sixth set of pins, bend all of the pins outward.

Gently reinsert the four jumper pins into the black socket of Drive 4. Note - The jumper chip is not as large as the socket; therefore, two pin holes should be visible to your left once the jumper chip is firmly inserted into the socket.



For Drive 4 (type II only), except for the fourth and seventh set of pins, bend all of the pins outward.

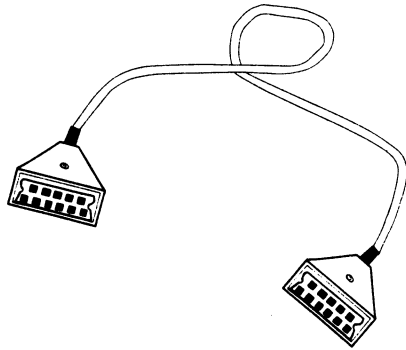
Gently reinsert the four jumper pins into the black socket of Drive 4. Note - The jumper chip is not as large as the socket; therefore, two pin holes should be visible to your left once the jumper chip is firmly inserted into the socket.



Do not remove the terminator chip on Drive 4 (type I or type II).

6. Look at the system drive data cable; it has a D-connector at both ends.

Connect the system drive data cable between your computer and your system drive (Drive 1). (There are two D-connectors at the base of the system drive: Either connector can be used.)

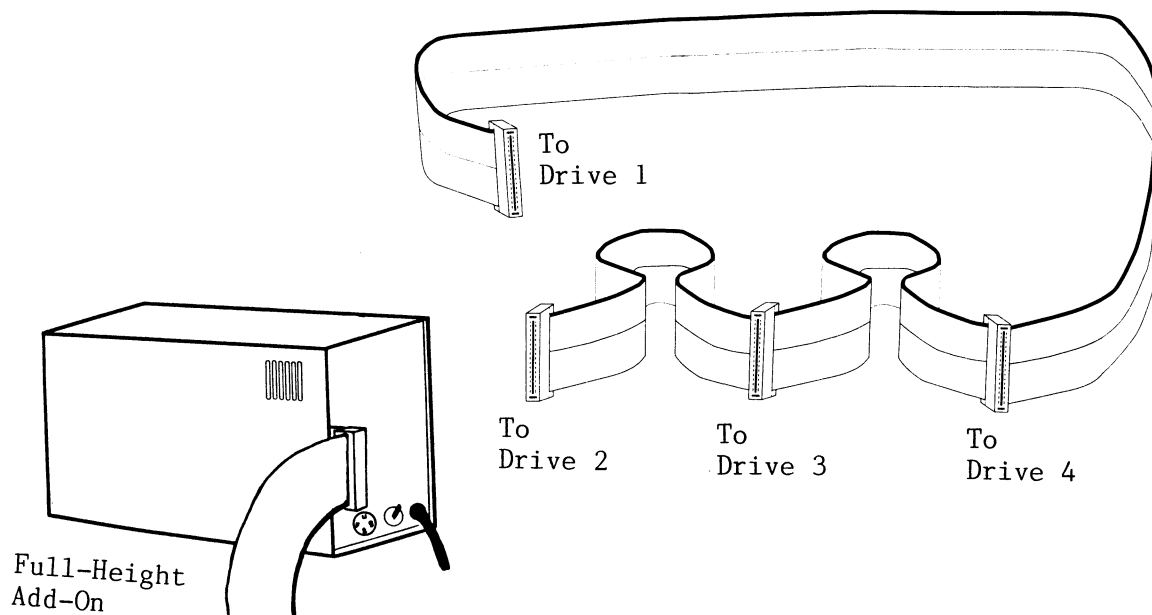


7. Look at the add-on drive ribbon cable. Notice the colored striped edge (probably red) on the ribbon cable and the four edge connectors.

If you have half-height add-on drives, connect the add-on drive ribbon cable to the system drive (Drive 1), the first add-on drive (Drive 2), the second add-on drive (Drive 3), and the third add-on drive (Drive 4), as depicted in the figure on page 2-17. Be sure the colored striped edge is up.

If you have full-height add-on drives, the previous figure does not show the correct position of the card edge on Drive 2, Drive 3, and Drive 4. Instead, look at the lower, left rear of Drive 2, Drive 3, and Drive 4. Connect the card edges to the ribbon cable. Note that the ribbon must be twisted about 180 degrees and the colored striped edge must be down when the ribbon is connected to the card edge connectors on Drive 2, Drive 3, and Drive 4.

Except for the position of the card edge on the add-on drives, half-height and full-height drives are cabled identically.



8. Plug your Atari Power Adapter into an ac wall outlet and plug its small dc plug into your computer.

9. Plug your drives' ac power cords into an ac wall outlet.

Appendix

A-1 Specifications

Specifications

Media	5¼-inch diskette
Typical Media Life	3 million passes/track
Storage Capacity (Formatted): Single Density	88,000 bytes/side
Track Density	48 tracks/inch
Head Seek Time (track to track)	20 milliseconds
Data Transfer Rate	19,200 bits/second
Start/Stop Time	1 second (max)
Operating Temperature	10°C to 40°C
Operating Relative Humidity	20% to 80% (non-condensing)
Head Life (normal use)	20,000 hours
Input Power — Controller Drive Domestic Models Foreign Models	105-125 V, 1.0 A (max), 50-60 Hz 210-250 V, 0.5 A (max), 50-60 Hz
Input Power — Add-On Drive Domestic Models Foreign Models	105-125 V, 0.5 A (max), 50-60 Hz 210-250 V, 0.25 A (max), 50-60 Hz

PROBLEM REPORT FORM

In case of a problem, please read the instructions on the last page of this manual. If you need to report a problem, please fill out this form completely and send it to Percom Data. If it is necessary to return equipment to solve the problem, include a copy of the problem report with the returned equipment. If you do not need to return equipment, mail this report to the Service Department at Percom Data Corp.

We suggest you retain a copy for reference.

a. Your Name _____ Date _____

Address _____

City _____ State _____ Zip _____

Telephone Number _____

b. Percom Data Product _____ Version _____

Date of Purchase _____ Dealer's Name _____

c. Description of Your Equipment

Computer _____ Version _____ Memory _____

Disk System _____ Make of Drives _____

Number of Drives _____ Number of Tracks Each Drive _____

Make and Model of Printer _____

Other Peripherals _____

Disk Operating System _____ Version _____

Other Software _____

(Continued)

(Problem Report Continued)

If you have made any modifications to your hardware or software, please describe fully, even if only minor.

Use an additional sheet if necessary.

If there is anything unique or unusual about your system configuration or your system memory map, please describe fully.

d. Problem Description

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper appears to be a standard notebook page.

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PERCOM DATA CORPORATION reserves the right to make changes to any products or specifications described herein without notice

IN CASE OF DIFFICULTY PLEASE, REREAD THE INSTRUCTION MANUAL

If you are unable to resolve your problem, either contact your Percom Data Retailer for assistance or mail us a letter with a completed Problem Report Form enclosed. A Problem Report Form is included at the end of this manual.

When your letter is received, your problem will be given to customer service. Every effort will be made to respond to your letter promptly. If necessary, customer service will attempt to duplicate your problem, and will confer with engineers and other technicians as required. Customer service may write or call you for more information.

If you return equipment for repair, please be sure to follow the procedures given below. Be sure to enclose a completed Problem Report with the returned equipment.

HOW TO RETURN EQUIPMENT FOR REPAIR

Please read the above information under IN CASE OF DIFFICULTY before proceeding to return equipment for repair.

You have done everything you know how to do. You have read and reread the instruction manual and technical memos but you still cannot get your system to work!

It is time to let us help. We have yet to find a sick unit that cannot be restored to full health and vigor.

There are a few things you can do that will help us expedite your repair:

1. Write or call for return authorization before returning any merchandise. RETURNS WITHOUT AUTHORIZATION WILL BE REFUSED.
2. Copy the blank Problem Report, fill in the copy, and return the unit for repair. Questions that do not relate to the reason the unit is being returned for repair must be sent in under separate cover.
3. OUT-OF-WARRANTY repairs are performed for a labor charge, parts, and shipping. If we find that a unit is functioning properly as received and does not require any service, there will be a CHECKOUT CHARGE plus return shipping and insurance. Do not enclose any payment. The unit will be returned C.O.D. for authorized repairs and shipping.
4. When returning a unit for repair, pack it in a large carton with at least 3 inches of padding on all sides. We will not attempt to service any unit if there is shipping damage until the claim is settled. Ship prepaid by UPS or INSURED PARCEL POST to: Service Department, Percom Data Corporation, 11220 Pagemill Road, Dallas, Texas, 75243.

HOW TO ORDER MERCHANDISE BY MAIL

The following procedures will help us expedite your mail orders. We suggest, however, that you make your purchase from an authorized Percom Data Retailer whenever possible. If you do not know the name of a nearby Percom Retailer, call our toll-free order number and ask for Sales.

TOLL-FREE PHONE ORDERS: To save you money and insure prompt service, we have installed a toll-free number (1-800-527-1222) FOR PLACING ORDERS ONLY. We cannot transfer calls received on our toll-free number to other departments - please help us serve you better by dialing the correct number.

PROMPT SERVICE: We ship the cheapest, fastest way. We use UPS up to 50 pounds per item, 100 pounds per shipment. We use truck freight for large or heavy shipments. Transportation charges are collected on delivery.

C.O.D. ORDERS: C.O.D. orders are accepted where possible.

TEXAS SALES TAX: Texas law requires that we collect a 5% sales tax on all shipments within Texas.

MINIMUM ORDERS: We will add a handling charge of \$2.00 to all orders totaling less than \$15.00.

DAMAGED SHIPMENTS: Have the carrier note if the shipment is in damaged condition, then file a claim. If there is concealed damage, contact the carrier for an inspection and then file a claim. Save your shipping carton.

